Blockchain and IP
July 9-10, 2019 - USD Law School

- <u>Taxonomy - What Are the Key Features of Blockchain Technology?</u>

  o *Three components – not all created equal*
    - <u>peer-to-peer networking</u> – distributed computers connected together
    - <u>blockchain</u> – time stamped digital ledger where information is recorded
      - "block" = the data / "chain" = transaction history
    - <u>consensus mechanisms</u> – process by which peer-to-peer network comes to agree on data to be recorded on the blockchain
      - creation of a provable *objective reality*
        - o Validate and reconcile objective reality
      - Public and private consensus mechanisms
        - o public – trust in third parties who are economically motivated
        - o private – trust in central authority and credentialed members
      - Cryptographic *private key* controls all

  o *Triple-Entry Accounting* – the revolution in trust
    - Third entry of account created on the blockchain
    - Solves problem of trust – no escrow required

  o *Fungible v. Non-Fungible* –
    - Interchangeable v Non-Interchangeable
      - (*e.g.* currency v. stock)
    - Uniform v Unique
      - (*e.g.,* currency v. concert ticket)
    - Divisibility – (*e.g.,* BTC divisible by 8 decimals, vs whole token is smallest unit)

- <u>What Areas of Life Are Being Transformed By Blockchain Technologies?</u>
  o *Currency* – no trusted intermediary needed to function like cash – digital bearer bond
    - Bitcoin solves double-spend problem
    - Bitcoin monetary policy[1]

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[1] *See* Amous, Saifedean, The Bitcoin Standard: The Decentralized Alternative to Central Banking, https://www.amazon.com/Bitcoin-Standard-Decentralized-Alternative-Central/dp/1119473861

- <u>What is the largest market that can be technologically disrupted? Money</u>
  - Global supply of money aprox $80 trillion
    - Double since 2008
  - Paper notes / money transmission antiquated

  - Orthodox v Heterodox Concepts of money[2]
    - *Orthodox* – money emerges organically from market demand
    - *Heterodox* – money is a creature of law and state

  - <u>Indispensable Qualities of Money[3]</u>
    - *Scarcity*: 21 million total supply, 16 million effective
    - *Durability / Inflation*: Increased value over time. Disinflationary / Deflationary – predictable
      - Easy to lose – private keys
    - *Portability*: What a $billion in bitcoin looks like: 3FZbgi29cpjq2GjdwV8eyHuJJnkLtktZc5
    - *Divisibility*: divisible to 8 decimal places – 100 million "Satoshis" per BTC
    - *Recognizable / Verifiable*: verifiable on bitcoin blockchain
    - *Density / Val per Unit:* see portability
    - *Fungibility:* one btc = one btc
      - Blacklists / titling?
    - *Demand / Useage:* Not readily accepted - Feedback loop
    - *Stability:* Highly volatile -

  - *Stable Coins* – digital asset pegged to another asset for stable value
    - Collateralized (fiat currency, gold, etc.)
    - Algorithmically adjusted
    - *E.g.*, Tether, Facebook Libra
      - Libra – global *corporate* money separate from financial system[4]

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[2] *See* Umlauft, Is Bitcoin Money? https://www.researchgate.net/publication/325809503_Is_Bitcoin_Money_An_Economic-Historical_Analysis_of_Money_Its_Functions_and_Its_Prerequisites
[3] *See* Bagus, The Quality of Money, https://pdfs.semanticscholar.org/e352/a2a76370f84bc07d77bfe807b412dbca396e.pdf
[4] House F.S. Committee Cease Letter to FaceBook, https://financialservices.house.gov/uploadedfiles/07.02.2019_-_fb_ltr.pdf

- o *Tokenized Assets* – authenticate a unique physical item represented as a crypto-token
  - ▪ Securities – issuance and trading[5]
  - ▪ Real Estate – syndicated deals[6]
  - ▪ Tokenized everything – from supply chain to items in digital worlds

- o *Identity* – cryptographic key to verify identity and control identity data
- o *Audit trails* - goodbye Enron
- o *Smart contracts* – coded instructions automatically execute if agreed conditions satisfied
- o *Public Governance* – can we improve democracy?
  - ▪ eliminate voting fraud?

- • <u>What Are the Legal Issues Created By the Blockchain Revolution?</u>

  - o *Definitions: what is it?*
    - ▪ U.S. Regulators - *The blind men and the elephant*
      - • <u>I.R.S.:</u> cryptocurrency is taxed as personal property
      - • <u>CFTC</u>: bitcoin is a commodity, other cryptocurrencies, maybe
        - o CFTC general anti-fraud and anti-manipulation authority over "any … a contract of sale of any commodity in interstate commerce…" 7 U.S.C. § 9(1).
        - o Jurisdiction – futures - 28 day settlement rule[7]

      - • <u>S.E.C.:</u> securities laws apply to fundraising and trading
        - o Definition of a Security –
          - ▪ 1933 Act § 2(a)(1), 15 U.S.C. § 77b(1)
            - • Catch-all "Investment Contract"[8]
            - • <u>4 Elements</u>: Investment of Money. Expectation of profits, Common enterprise. Main efforts from third party[9]

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[5] E.g., https://polymath.network/
https://thetokenist.io/harbor-launches-securities-tokenization-platform-first-reit-tokenized/
[6] https://www.coindesk.com/66-million-building-to-be-tokenized-on-ethereum-blockchain-in-record-deal
[7] *See* CFTC, Retail Commodity Transactions Involving Virtual Currency,
https://www.cftc.gov/sites/default/files/idc/groups/public/@lrfederalregister/documents/file/2017-27421a.pdf
[8] *SEC v. W. J. Howey Co.*, 328 U.S. 293 (1946) (case defining "investment contract")
[9] Framework for "Investment Contract" Analysis of Digital Assets, https://www.sec.gov/files/dlt-framework.pdf

- o SEC enforcement actions[10]
  - *SEC v KIK Interactive, Inc.*, No. 1:19-cv-05244 (S.D. N.Y.)[11]
  - SEC "No Action Letter"[12]

- o Civil Litigation
  - *In re Tezos Securities Litigation,* No. 17-cv-06779 (N.D. Cal.) (is an ICO an "offering" of securities?)

- • *Distinction between Offering and Token*?
  - o Fundraiser is "investment contract"
  - o Token maybe depending on characteristics
    - E.g., governance and economic models, centralized decision making

- o <u>Attempts to Avoid Securities Laws</u>
  - *Initial Coin Offerings* – "ICOs"
  - Swiss Foundation Model
    - • Delaware Corp – creates IP – seed round
    - • Transfer IP to Swiss Foundation
      - o Foundation conducts ICO, collects funds, issues tokens (*e.g.,* Tezos)

  - *SAFTs* – Simple Agreement for Future Tokens[13]
    - • Concept: The SAFT is the security, the token is not
      - o *E.g.,* Hunichen v Atonomi LLC, No. 2:19-cv-615 (W.D. Wa) (SAFT investors alleging token offering did not comply with state securities law and SEC exemptions)

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[10] *E.g.,* Munchee Cease and Desist, https://www.sec.gov/litigation/admin/2017/33-10445.pdf

[11] SEC Complaint, https://www.sec.gov/litigation/complaints/2019/comp-pr2019-87.pdf
KIK Wells Submission, https://www.kin.org/wells_response.pdf

[12] Turnkey Jet No-Action Letter, https://www.sec.gov/divisions/corpfin/cf-noaction/2019/turnkey-jet-040219-2a1.htm

[13] https://saftproject.com/static/SAFT-Project-Whitepaper.pdf

- Initial *Exchange* Offering – "IEO"[14]
  - ICO conducted by an "exchange"
  - Crypto exchange handles: marketing, KYC/AML, smart contract design, screening of projects, raising of funds
  - No U.S. examples

- SEC *"Framework for 'Investment Contract' Analysis of Digital Assets*[15]
  - SEC rules apply regardless of structure/form
  - "Active Participant" – efforts of others
    - Broader than in corporate context
      - Promoter, sponsor, "managerial efforts"
      - Develop / launch code?
      - Manage /oversee network?
      - Creates / supports asset or market?
      - Decision making: vendors, exchanges?
      - Leading role in validating transactions

- <u>Exchange Act</u> – *Crypto "Exchanges" Must Register*
  - 15 U.S.C. § 78f
    - Every "Exchange" transacting in crypto must register
  - Regulation ATS, 17 C.F.R. § 242.301
    - Broker Dealers can execute trades
  - Do "Best Execution" rules apply?[16]
  - Market information and fragmentation
    - SEC Regulation NMS Applies?[17]
      - SEC Rule 611"Order Protection Rule"
      - "NBBO"
      - SEC Rule 610 "Access Rule"

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[14] *See* Binance BitTorrent Launchpad, https://www.binance.com/en/blog/296665704096014336/Binance-Launchpad-BitTorrent-Token-Sale-Results

[15] https://www.sec.gov/corpfin/framework-investment-contract-analysis-digital-assets

[16] For market structure issues, *see e.g.,* The Regulation of Trading Markets: A Survey and Evaluation, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2955112

[17] Reg NMS: A Retrospective Review & Practical Reforms for Improvement, https://ptg.fia.org/sites/default/files/FIA%20PTG%20-%20Reg%20NMS%20-%20A%20Retrospective%20Review%20%26%20Practical%20Reforms%20for%20Improvement.pdf

- Public quotations

- N.Y. A.G., Virtual Markets Integrity Initiative- Found many problems with crypto exchanges[18]
  - Conflicts of interest
    - Broker / exchange / custody / trader
  - Unfair Structures
    - Bots, wash trading, no surveillance,
  - No Protection
    - Security, audits, hacking, insurance

  - *Securities Token Offerings* – "STOs"[19]
    - Traditional equity, debt, REIT and other securities on the blockchain
      - Securities law restrictions coded into tokens
        - SEC Regulation D Private Offerings
          - Number of investors, Amount raised, Jurisdiction of investors, General Solicitation? Lock-Up periods
        - Infrastructure development v market demand

- <u>Treasury: money laundering / terrorist financing laws apply to transfers</u>
  - Must conduct KYC/AML
  - "Money Services Business"[20]
    - Generally: acting as an intermediary or exchange one crypto to another
    - Registration requirements – federal and state
    - DApp creators and users may be MSB
    - Exchanges may not be MSB if no bids/offers and no settlement

      - NY "BitLicense"- crypto transmission, custody, buying/selling, exchange services, or issuing crypto
        - most projects exclude N.Y. residents

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[18] https://virtualmarkets.ag.ny.gov/

[19] E.g., https://polymath.network/

[20] https://www.fincen.gov/sites/default/files/2019-05/FinCEN%20Guidance%20CVC%20FINAL%20508.pdf

- State laws
  - *Corporate law* – integrate blockchain into corporate governance?
    - e.g., Delaware Blockchain Initiative[21]
  - Are electronic records recognized? *e.g.* Cal. Assembly Bill 2658

  - *Property Rights*
    - *Faasse v. Coinbase,* No. 18-cv-01382 (N.D. Cal.) (what are property rights in unclaimed bitcoin?)
      - Unclaimed Property Laws[22]
    - What happens if private keys are lost or stolen?[23]
      - Contempt?
      - Tracing Assets?
    - De facto Titling?
      - FATF –exchanges must treat crypto transactions like a wire transfer[24]
        - Collect and transmit info for all transactions to all exchanges
        - Most countries, *de facto standard?*

- *Contract Law* - Smart contracts[25]
  - Enforceable in AZ, TN, NE, NY, OH, VT
  - Neither "smart" nor "contract"
  - Operational terms written into code: if-then rules and conditional logic
    - Parties have a guarantee that the code will be executed as written. If parameters occur, code executes automatically
      - Can solve problems of rational breach
      - E.g., Insurance (insurable event) - Derivatives (private and systemic liquidity?)

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[21] https://finance.yahoo.com/news/companies-put-shareholders-blockchain-starting-154310582.html

[22] E.g, Kentucy, KRS § 393A.330 (updated for virtual currency, limits claims for appreciation after liquidation by the state)

[23] Throw Away the Key, or the Key Holder? https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3328870

[24] FATF, Guidance for a Risk-Based Approach to Virtual Assets…, https://www.fatf-gafi.org/publications/fatfrecommendations/documents/guidance-rba-virtual-assets.html

[25] Nazarov & Pompliano, Smart Contracts 101, https://www.youtube.com/watch?v=OTaSvj9Fc60

- "Nodes" *execute* performance
  - How ensure validity of data?
    - "Oracles" - Parties executing contract not parties obtaining information
  - Fees – incentives for nodes and oracles to perform
    - Peer review of nodes and oracles to build trust
    - More value at issue = more nodes / oracles for more security and redundancy

- Elements of a Contract?
  - Formation, Execution, Performance, Breach
    - Issues: Mistake? "Commercially reasonable efforts", Enforcement, Jurisdiction
- Can a Smart Contract exist as a separate legal entity?[26]

- *Evidence* – Blockchain records admissible in evidence?
  - Fed. R. Evidence 803 – Exceptions to Hearsay
    - 803(6): Business Records?
      - "record of an act, event, condition…"
      - "Made by … someone with knowledge"
      - "kept in the course of a regularly conducted activity of a business, organization… whether or not for profit"
      - "making of the record was a regular practice of that activity"
      - Shown by qualified witness / custodian
      - Opponent cannot show lack of trustworthiness

- *Blockchain networks are global. Multi-jurisdictional analysis applies*
  - Where is an international project located?
  - Where do the transactions occur?

- *Law as Code* – What IS the law really?

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[26] Are Autonomous Entities Possible?, https://scholarlycommons.law.northwestern.edu/cgi/viewcontent.cgi?article=1270&context=nulr_online&preview_mode=1&z=1561384769